

REMARKS

Favorable reconsideration of the present application is respectfully requested.

The non-elected Claims 1-6 have been canceled without prejudice to the filing of a divisional application directed thereto. On the other hand, it is respectfully requested that the withdrawn Claims 16-19, which depend from Claim 7, be included in any patent issuing from the present application.

The claims have been revised in response to the objections of paragraphs 4-7 of the Office Action and the rejections under 35 U.S.C. § 112, first and second paragraphs (paragraphs 8-13). In particular, the term “defined” has been changed to “claimed” throughout the claims. Claim 8 has been amended to correct a minor error, whereby Claim 21 is no longer a duplicate of this claim. The preamble of Claim 7 has been clarified. The phrase “introduction wall” has been changed to “top wall.” The term “high pressure” has been further defined as being 1MPa or more; basis for this is found at lines 1-2 of page 17 in the specification. The term “integrally linked” has been changed to “continuous with.” The claims have been amended to clarify that the fluid introduction passage is included in the top wall, so that the top wall is positioned above the entire surface of the processing object. It is Applicants’ understanding, from the interview noted below, that these amendments are sufficient to overcome the outstanding objections and rejections under 35 U.S.C. § 112. In this regard, it is noted that Applicants pointed out during the interview that Claim 13 recites structure, e.g., a plurality of through holes formed concentrically.

Claims 7-9 and 21 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. patent 4,994,301 (Kusumoto et al) in view of U.S. patent 6,647,993 (Shang et al). (It is noted that Kusumoto et al has not been listed in a PTO Form 892, and so it is requested that this be done in the next Office Action). Applicants wish to thank Examiner Rigglesman for the courtesy of an interview on July 11, 2008 at which time the aforementioned rejection was

discussed. Applicants at that time proposed further amendments responsive to the “Response to Arguments” portion of the Office Action (paragraph 3). In particular, it was proposed to amend Claim 7 to recite that the fluid is distributed “radially” outward and that the high pressure fluid is introduced through the introduction passage to be supplied “perpendicular” to the surface of the processing object through the gap in each of the through holes. The Examiner further requested, in the interview, that the claims recite that the radial outward distribution is due to the rotation of the processing object, and this has been done in the present response.

As was explained during the interview, the claimed invention is directed to a high pressure processing apparatus for supplying a high pressure fluid to a processing object, e.g., drying semiconductor wafers or liquid crystal substrates using a supercritical or subcritical fluid. The structure of the high pressure processing apparatus of the invention is designed to cause the high pressure fluid to be supplied evenly and approximately perpendicular to the surface of the wafer, and then to be distributed radially outward. It therefore includes a fluid dispersion mechanism for dispersing the flow of high pressure fluid, comprising a closure plate formed with a plurality of through holes and placed between the top wall and the mounting table in opposed relation to the entire surface of the processing object on the mounting table, to make a gap with the top wall and allow the high pressure fluid introduced through the introduction passage to be supplied perpendicular to the surface of the processing object through the gap and each of the through holes. It also includes a rotating mechanism and a fluid discharger including a fluid discharge passage provided in the side wall of the high pressure chamber at an outward position relative to the processing object, so that the fluid supplied from the fluid dispersion mechanism can be distributed radially outward along the surface of the processing object.

As was also discussed during the interview, Kusumoto et al is not directed to a high pressure processing apparatus which introduces a high pressure fluid of at least 1MPa, but is instead a CVD apparatus intended to minimize turbulence in a low pressure fluid during CVD processing (column 3, lines 18-22). In particular, Kusumoto et al intends to create a laminar flow in the low pressure reduction gas and a reactant gas introduced by the introducing portions 4a and 4b. As particularly shown at Figure 8c, a laminar flow of the gases from portions 4a, 4b results from the stabilizing inert gas flow Q introduced through the gas spouting plate 6a (column 6, lines 15-22).

Therefore, as a threshold matter, Kusumoto et al is not even analogous prior art since it is not in the same field as the claims (it is a low pressure CVD apparatus as opposed to a high pressure processing apparatus), and it is not concerned with the same problems as the claimed invention (e.g., maintaining supercriticality for the high pressure fluid). See MPEP § 2141.01(a). Thus Kusumoto et al could not provide any evidence relevant to the obviousness of the invention.

Beyond this, Kusumoto et al lacks a fluid introduction passage connected to a source of fluid at high pressure of at least 1MPa or a fluid discharge passage provided in the side wall of the high pressure chamber. Instead, the fluid discharge passage 7 in Kusumoto et al is provided in the bottom wall of the chamber at a location designed to promote the laminar flow as stabilized by the inert gas Q. Its repositioning would not have been obvious to one skilled in the art since this could disrupt the desired laminar flow in Kusumoto et al.

It is noted that Shang et al, which was cited to teach a gas exhaust passage 30 in a side wall of a chamber, is also a low pressure CVD apparatus which requires a pump for the gas outlet (column 4, lines 65-67) and so is also not analogous prior art. In any case, one skilled in the art would not have been motivated to reposition the outlet portion 7 of Kusumoto et al, despite the fact that it was known from Shang et al that an outlet could be placed in the side

wall of a chamber, because this could disrupt the laminar flow shown in Figure 8C of Kusumoto et al. The amended claims therefore define over this prior art.

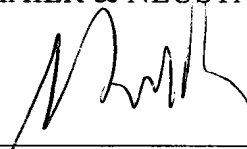
Concerning paragraph 19 of the Office Action, it is noted that Japanese patent publication JP60191281 was cited to teach the feature of Claim 13, and would not have overcome the shortcomings of Kusumoto et al and Shang et al with respect to Claim 7 from which Claim 13 depends.

Applicants therefore believe that the present application is of a condition for allowance and respectfully solicit an early Notice of Allowability.

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Respectfully submitted,

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